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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,385	12/09/2003	Tac-Sik Oh	51345/P849	4675

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EXAMINER
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ROY, SIKHA

ART UNIT	PAPER NUMBER
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2879

MAIL DATE	DELIVERY MODE
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11/27/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/731,385

Applicant(s)

OH, TAE-SIK

Examiner

Sikha Roy

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 16-18 and 23-25 is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The Amendment, filed on September 5, 2007 has been entered and acknowledged by the Examiner.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 -13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,900,066 to Toyota et al., and further in view of USPN 4,472,658 to Morimoto et al.

Regarding claim 9 Toyota discloses (Figs. 1, 32 column 1 lines 41-67 column 2 lines 1-10, column 27 lines 25-52) a field emission display comprising a first substrate 110 and a second substrate 30 opposing one another with a predetermined gap in between, the first and second substrates being sealed by a sealant (bonded to each other) wherein a vacuum is formed, an electron emission assembly formed on the first substrate and emitting electrons and an illumination assembly (anode panel AP) including a phosphor screen 31 formed on the surface of the second substrate, a metal layer 33 formed on the phosphor screen within the vacuum assembly and an anode terminal extending from the vacuum assembly to outside, in which an end of the anode

input terminal within the vacuum assembly contacts the metal layer 33 to be electrically connected to the metal layer.

Toyota is silent about a portion of the anode input terminal formed from a transparent conductive material extending beyond the sealant.

Morimoto in same field of endeavor discloses (Fig. 1 col. 3 lines 37-40, claim 4) anode input terminal (wiring 2c) extends beyond the sealant (substrates 1 and 8 are in sealing relationship, claim 1) and is formed of transparent conductive material.

The selection of a known material for a known purpose is within the skill of the art. *In re Leshin* 125 USPQ 416. It would have been obvious to one of ordinary skill in the art at the time of invention to select the anode terminal extending outside of the device of Toyota formed of transparent conductive material as disclosed by Morimoto since it has been held to be within general skill of worker in the art to select a known material based on its suitability for the intended use.

Regarding claim 10 Morimoto discloses (col. 4 lines 13-18) the anode terminal is indium tin oxide film.

Regarding claim 11 Toyota and Morimoto disclose the claimed invention except the metal layer covering a portion of the anode input terminal. It would have been an obvious matter of design choice to have the metal layer covering a part of the anode input terminal since the applicant has not disclosed that this configuration of the metal layer solves any stated problem or is for any particular purpose and it appears that the

invention would perform equally well with the metal layer connected to the anode input terminal as disclosed by Toyota and Morimoto.

Regarding claim 12 Toyota discloses (Fig. 32 column 1 lines 40-60) the electron emission assembly includes the electron emission sources 115A and electrodes wherein the electrodes include cathode electrodes 11 and gate electrodes 113 being insulated from each other by an insulation layer 112 and formed respectively in a stripe pattern, the cathode electrodes and gate electrodes crossing each other at right angles.

Regarding claim 13 Toyota discloses (column 20 lines 23,24 column 29 lines 50-64) the electron emission sources being carbon nanotubes, diamond.

Regarding claim 15 Toyota discloses (Fig. 32 column 1 lines 40-65) the field emission display device comprising cathode electrodes 111 formed on the first substrate 110, the insulating layer 114 formed on the first substrate covering the cathode electrodes, the gate electrodes 113 formed on the insulation layer, the insulation layer and the gate electrodes including openings for exposing the cathode electrodes and the electron emission sources 115A formed in the openings on the exposed cathode electrodes.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,900,066 to Toyota et al., USPN 4,472,658 to Morimoto et al. and further in view of U.S. Patent 5,726,530 to Peng.

Regarding claim 14 Toyota and Morimoto do not disclose the gate electrodes being formed on the first substrate and the insulation layer being formed on the first substrate covering the gate electrodes.

Peng in the same field of endeavor discloses an FED comprising a substrate, a plurality of gate electrodes formed on the substrate, an insulation layer covering the gate electrodes, and a plurality of cathode electrodes over the insulating layer, and teaches this embodiment to be preferred over an FED wherein the cathode electrodes are disposed over the substrate, because the former provides a display whose resolution is not limited by the provision of individual ballast resistors for each pixel, said ballast resistors having high reliability, being capable of meeting tight tolerance, and controlling the emission current of each pixel', and further the chances of short circuiting the display and its detrimental effects are reduced (see Col. 1, lines 43-60; Col. 2, lines 47-59; and Figs. 3A, 4A, 6A, 7A and 8A).

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to provide a plurality of gate electrodes on the first substrate and insulation layer covering the gate electrodes and a plurality of cathode electrodes over the insulating layer as taught by Peng for the field emission device of Toyota and Morimoto for providing a display whose resolution is not limited by the provision of individual ballast resistors for each pixel, said ballast resistors having high reliability, being capable of meeting tight tolerance, and controlling the emission current of each pixel, and further the chances of short circuiting the display and its detrimental effects are reduced.

***Allowable Subject Matter***

Claims 1-8, 16-18 and 23-25 are allowed over the prior art of record.

Regarding claims 1, 16 and 23 the prior art of record neither teaches nor suggests a field emission display having all the limitations as claimed and particularly the limitation comprising a transparent conductive layer of the illumination assembly having a portion extending beyond the sealant as anode input terminal to which an anode voltage is applied.

Claims 2-8 are allowed for the same reason as of claim 1 because of their dependency status from claim 1.

Claims 17-18 are allowed for the same reason as of claim 16 because of their dependency status from claim 16.

Claims 24-25 are allowed for the same reason as of claim 23 because of their dependency status from claim 23.

***Response to Arguments***

Applicant's arguments with respect to claims 9 - 15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for



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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Sikha Roy*

Sikha Roy  
Primary Examiner  
Art Unit 2879